Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK G. HARWARD

Appeal No. 1997-2660
Application No. 08/224,407

ON BRIEF

Before URYNOWICZ, THOMAS, and BARRY, Administrative Patent Judges.

BARRY, Administrative Patent Judge.

## DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the final rejection of claims 1-20. We reverse and enter new grounds of rejection under 37 C.F.R. § 1.196(b).

## BACKGROUND

The invention at issue in this appeal enables built-in, self-testing of a smart memory. A smart memory is a memory that includes on-chip processing capabilities that allow for implementation of a parallel processing system. The performance of such a system depends on the reliability of its components, particularly on the reliability of its smart memories.

The invention enables a smart memory to perform a self-test to detect its operability. Because the self-test is done internally, it can be completed quickly so as not to degrade the efficiency of a parallel processing system in which the smart memory resides.

Claim 12, which is representative for our purposes, follows:

> 12. A method of self-testing a smart memory including a data RAM, a broadcast RAM, and a data path which includes a plurality of processing elements operable to perform specific functions, comprising the steps of:

writing a pattern to the data RAM and the broadcast RAM;

comparing the contents of the data RAM with the pattern using memory test circuitry; and comparing the contents of the broadcast RAM with the pattern using said memory test circuitry;

writing another pattern to the data path;

testing said specific functions of said plurality of processing elements of the data path with data path test circuitry in accordance with results of said comparing steps using said another pattern; and

controlling said data path to perform said specific functions during said testing step.

The references relied on in rejecting the claims follow:

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|---|---|---|
| Jacobson | 4,715,034 | Dec. 22, 1987 |
| Choy | 5,075,892 | Dec. 24, 1991 |
| Eikill et al. (Eikill) | 5,274,648 | Dec. 28, 1993. (filing date Feb. 3, 1992) |

Claims 1-3 and 12-14 stand rejected under 35 U.S.C. § 103 as obvious over Choy in view of Eikill. Claims 4-11 and 15-20 stand rejected under 35 U.S.C. § 103 as obvious over Choy in view of Eikill, further in view of Jacobson. Rather than repeat the arguments of the appellant or examiner in toto, we

refer the reader to the briefs and answer for the respective details thereof.

## OPINION

In reaching our decision in this appeal, we considered the subject matter on appeal and the rejections advanced by the examiner. Furthermore, we duly considered the arguments and evidence of the appellant and examiner. After considering the totality of the record, we find that claims 1-11 as presently claimed, lack an written description under 35 U.S.C. § 112, ¶ 1, and are indefinite under 35 U.S.C. § 112, ¶ 2. We also find that the rejection of claims 1-11 under 35 U.S.C. § 103 is inappropriate. We are persuaded, moreover, that the examiner erred in rejecting claims 12-20. Accordingly, we reverse and enter new grounds of rejection under 37 C.F.R. §

1.196(b).[1] Our opinion addresses the patentability of claims 12-20 and of claims 1-11 seriatim.

Patentability of Claims 12-20

We begin by noting the following principles from In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

> In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. Id. "A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Bell, 991 F.2d 781, 782, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)). If the examiner fails to establish a prima facie case, the rejection is improper and will

[1] Because he appellant filed U.S. Patent Application No. 08/477,742 ('742 Application), he should know that its claims 21-23 and 25-34 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of the instant application. The examiner should consider (provisionally) rejecting claims 1-20 of the instant application under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-23 and 25-34 of the '742 Application.

> be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

With these in mind, we analyze the appellant's arguments.

The appellant's argues, "It is not seen where the cited references suggest that this data path ...processing elements operable to perform specific functions ... are tested by writing another pattern to the data path." (Appeal Br. at 9.) The examiner replies, "Eikill show that an interface includes ... processing devices (18 & 20) and main storage. The main storage includes memory cards (24, 26 & 28). Such processing devices (18 [&] 20) perform operation on data and provide commands and related data for transferring to and from the main storage (the memory cards) (column 4 lines 10-13, 23-25 & 45-49)." (Examiner's Answer at 9.) He adds, "it would have been obvious

... to realize that not only the memory array integrity can be

tested ... but also the data lines (96, 98 & 100) [data path] can be tested while testing each of the memory arrays." (Id. at 10-11.) We agree with the appellant.

Each of claims 12-20 specifies in pertinent part the following limitations: "testing said specific functions of said plurality of processing elements of the data path with data path test circuitry ...." In summary, the claims recite circuitry for testing processing elements.

The examiner fails to show that teaching or suggestion of the claimed limitations. "Obviousness may not be establish using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnace Mfg., SGS Importers Int'l, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995) (citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984)). The mere fact that prior art may be modified as proposed by an examiner does not make the modification obvious unless the prior art suggested the

desirability thereof. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992), In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Here, the examiner admits, “Choy does not show the data path test circuitry for testing the path ...." (Examiner’s Answer at 8.) Although Eikill "includes two processing device, identified as **18** and **20**," col. 4, 11. 10-11, the examiner fails to identify any teaching of testing the processor devices. Noting that Eikill only teaches testing memories, he alleges, "it would have been obvious ... to realize that not only the memory array integrity can be tested ... but also the data lines (96, 98 & 100) [data path] can be tested while testing each of the memory arrays." (Examiner’s Answer at 10-11.) Because the examiner has not shown that the references teach testing a processor, his allegation amounts to impermissible reliance on the appellant’s teachings or suggestions. The addition of Jacobson has not been shown to cure the defects of Choy and Eikill.

For the foregoing reasons, we are not persuaded that teachings from the prior art would appear to have suggested the claimed limitation of circuitry for testing processing elements. The examiner has not established a prima facie case of obviousness. Therefore, we reverse the rejections of claims 12-20 under U.S.C. § 103. Next, we address the patentability of claims 1-11.

## Patentability of Claims 1-11

Our opinion addresses the following patentability issues for claims 1-11:

- inadequacy of written description
- indefiniteness
- obviousness.

We begin by addressing the inadequacy of the written description of claims 1-11.

## Written Description

Under 37 C.F.R. § 1.196(b), we enter a new ground of rejection against claims 1-11. "To fulfill the written description requirement, the patent specification 'must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.'"

Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479, 45 USPQ2d 1498, 1503 (Fed. Cir. 1998) (quoting In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989)). Fulfillment of the requirement is adjudged "as of the filing date" of the associated patent application. Vas-Cath, Inc. v. Mahurhar, 935 F.2d 1555, 1566, 19 USPQ2d 1111, 1119 (Fed. Cir. 1991).

Here, the appellant modified independent claim 1 by an "Amendment Pursuant to 37 C.F.R. § 1.115." (Paper No. 18 at 1-3.) Accordingly, each of claims 1-11 now specifies in pertinent part the following limitation: "data path test circuitry ... for testing said specific functions of said plurality of processing elements of said data path, wherein said testing includes: writing another pattern to said data RAM and comparing a response from said data path with an expected result ...." In summary, the amendment added that the data path test circuitry writes a pattern to the data RAM.

The appellant fails to show that the original specification, which includes the original claims, disclosed limitation. To the contrary, the specification teaches that the data path test circuitry writes the pattern to the data path. For example, the specification discloses that "data path tester 50 will send a pattern to data path 30." (Spec. at 8.) It adds that "the pattern that is sent to data path 30 by data path tester 50 is generated by stimulus generator 54 of data path tester 50." (Id. at 9.) The specification further teaches that "a linear feedback shift register is used to generate the stimulus to be output to data path 30." (Id. at 10.)

For the foregoing reasons, we are not persuaded that when the appellant's application was filed, the invention included the features of the data path test circuitry writing a pattern to the data RAM as now claimed. The appellant has not shown that the disclosure provides a written description of the invention

as presently claimed. Therefore, we reject claims 1-11 under 35 U.S.C. § 112, ¶ 1. Next, we address the indefiniteness of claims 1-11.

Indefiniteness

Under 37 C.F.R. § 1.196(b), we enter another new ground of rejection against claims 1-11. The second paragraph of 35 U.S.C. § 112 requires that the specification conclude "with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

As aforementioned regarding the inadequacy of the written description of the claims, each of claims 1-11 recites that the data path test circuitry writes a pattern to the data RAM. In view of the teachings of the specification explained in the previous section of our opinion, the claims take on an unreasonable degree of uncertainty. Therefore, claims 1-11 fail to particularly point out and distinctly claim the subject matter that the appellant regards as his invention. Next, we address the obviousness of claims 1-11.

Obviousness

A rejection under 35 U.S.C. 103 should not be based on "speculations and assumptions." In re Steele, 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962). "All words in a claim must be considered in judging the patentability of that claim against the prior art. If no reasonably definite meaning can be ascribed to certain terms in the claim, the subject matter does not become obvious-the claim becomes indefinite." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

For the reasons explained in addressing the inadequacy of the written description and the indefiniteness of claims 1-11, our analysis of the claims leaves us in a quandary as to what they specify. Speculations and assumptions would be required to decide the meaning of the terms employed in the claims and the scope of the claims. Therefore, we reverse pro forma the rejections of claims 1-11 under 35 U.S.C. § 103. We emphasize that out reversal is based on procedure rather than on the merits of the obviousness rejections. The reversal is not to be construed as meaning that we consider the claims to be patentable as presently drawn.

## CONCLUSION

To summarize, the rejections of claims 1-20 under 35 U.S.C. § 103 are reversed. New rejections of claims 1-11 under
35 U.S.C. § 112, ¶ 1, and under 35 U.S.C. § 112, ¶ 2, are added.

Our opinion contains new grounds of rejection pursuant to

37 CFR § 1.196(b) as amended at 62 Fed. Reg. 53131, 53197 (Oct. 10, 1997). Section § 1.196(b) provides that "[a] new ground of rejection shall not be considered final for purposes of judicial review." It also includes the following provisions.

> The appellant, withing two months from the date of the decision, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:
>
> (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner ....
>
> (2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record ....

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED
37 CFR § 1.196(b)

| | |
|---|---|
| STANLEY M. URYNOWICZ, JR.<br>Administrative Patent Judge | ) |
| JAMES D. THOMAS<br>Administrative Patent Judge | ) BOARD OF PATENT<br>) APPEALS<br>) AND<br>) INTERFERENCES |
| LANCE LEONARD BARRY<br>Administrative Patent Judge | ) |

LLB/sld

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APPEAL NO. 1997-2660 - JUDGE BARRY

APPLICATION NO. 08/224,407 April 7, 1994

APJ BARRY

APJ THOMAS

APJ URYNOWICZ

DECISION: **?ED**

Prepared by:

**DRAFT TYPED:** 21 Jun 01

**FINAL TYPED:**

Team 3, please note the following instructions:

Do NOT change style of citations.

Do insert full names of all inventors

Do insert reference(s).

Do add a mailing address

Do check quotations and citations.

Do proofread.

Thank you.